

HEADQUARTERS QUALITY MANAGEMENT SYSTEM MANUAL

Responsible Office: Office of the Associate Deputy Administrator
 Subject: **NASA HQ Quality Management System Manual**

DOCUMENT HISTORY LOG

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Revision	B	December 29, 1999	Expansion of Headquarters scope to include all Functional Offices processes. Additional application of 4.6, Purchasing requirement. For details see "HQSM1200-, Headquarters Quality System Manual Comment Disposition Marcie Swilley – 12/29/1999".
Revision	C	September 5, 2000	Revision resulted from DNV scope expansion audit nonconformance for clarification in the application of quality records in the HQ system. Several quality record tables have been added throughout the document, which provide specific direction for required quality records. Also revisions to HCP 1400-2 resulted in Appendices A & C being incorporated into paragraphs 2.0 and 4.6, respectively. Finally paragraphs 4.10, 4.12, and 4.13 were revised to reflect the scope expansion and the applicability of these elements to the NASA Arts and Exhibits Programs.
Revision	D	March 18, 2002	Revisions resulted from transitioning the HQ Quality Management System to the 2000 version of the ISO 9001 standard for quality management systems. The format of the manual is consistent with the NASA Strategic Management Handbook. This is a complete rewrite of the previous QSM.
Admin Update	D	January 30, 2003	Administrative Update to replace old ISO Document Library internet links with NODIS links. This change was made based on HQPD 1400.1A, Headquarters Directives System, which incorporated the HQS QMS documents into the HQS Directives System. Changes made to paragraph 1.4.4, QMS Documentation.

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Headquarters Quality Management System Manual

APPROVAL

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____ March 18, 2002 ____
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____ March 14, 2002 ____
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PREFACE

P.1 Purpose

This Quality Management System (QMS) Manual documents how NASA Headquarters (HQ) does business. It describes QMS business processes, how they help NASA meet its mission requirements, and how they strengthen the Agency Strategic Management System. Chapter 1 provides an overview of the HQ QMS and its components and discusses HQ's customer products and customers. Chapter 2 outlines HQ management roles and responsibilities. Chapters 3, 4, and 5 provide more detailed information about HQ strategic planning, performance planning and budgets, and performance evaluation, respectively. Appendices describe HQ purchasing requirements and the QMS' compliance with ISO 9001-2000. The appendices also provide a crosswalk between HQ QMS activities and HQ's customer products and NPG 1000.3 mission requirements.

P.2 Applicability

This QMS Manual applies to all HQ organizations. It is not intended to duplicate or contradict any other policy, procedure, or guideline. The QMS Manual references other documents that already cover specific topics, rather than reiterating their content. The QMS manual is intended to supplement these other documents so that a clear understanding is formed between the QMS Manual and other policy, procedures and guidelines. The HQ Executive Management Representative is responsible for maintaining this manual.

P.3 Reference

- a) NPD 8730.3 *NASA Quality Management System Policy (ISO 9000)*
- b) NPG 1000.2 *NASA Strategic Management Handbook (SMHB)*
- c) NPG 1000.3 *The NASA Organization*
- d) ANSI/ISO/ASQ Q9001-2000 *American National Standard, Quality Management Systems-Requirements*
- e) NPG 1441.1 *Records Retention Schedules*
- f) HQPC 1150.1 *Headquarters Quality Council Policy Charter*
- g) HQPG 1400.1 *Document and Data Control Headquarters Common Process*
- h) HQPG 1280.3 *Internal Quality Audits Headquarters Common Process*
- i) HQPG 3410.4 *Quality System Training Headquarters Common Process*

P.4 Cancellation

Headquarters Quality System Manual (September 5, 2000)

1 - NASA HEADQUARTERS QUALITY MANAGEMENT SYSTEM

1.1 Overview

The Headquarters (HQ) Quality Management System (QMS) is a process-based management system. It controls the quality of HQ customer products and mission requirements while implementing the HQ quality policy: **“to consistently deliver the cutting-edge, quality products and services required by our customers.”** The scope of the HQ QMS is Agency, Strategic Enterprise, and HQ management of NASA’s scientific research, space exploration, and technology development and transfer missions. HQ includes the leadership for the Strategic Enterprises and for Agency-level functional management. HQ is responsible for determining NASA’s mission, goals, and objectives and the strategy for programs and activities to achieve them. The HQ QMS augments the *Strategic Management Handbook* (NASA Procedures and Guidelines [NPG] 1000.2), which describes how the Agency manages itself. The QMS complies with the International Organization for Standardization’s 9001 (also referred to as ISO 9001) requirements for quality management systems (see Appendix A).

NASA’s purpose as an U.S. Government Agency is defined by its enabling statute, the *National Aeronautics and Space Act of 1958*, as amended. This and other Federal statutes and regulations set forth the kinds of programs NASA is to carry out, and the regulations that govern how NASA manages the resources entrusted to it by the American people. HQ is responsible for producing NASA’s goals, objectives, and strategies consistent with these statutes and regulations. HQ is responsible for Agency management, including formulating plans and providing guidance and oversight to the NASA centers. It guides and integrates budget development, defines the Agency’s long-term institutional investments, and leads and coordinates Agency wide functions. Most HQ products are products that HQ provides to other parts of NASA as part of HQ’s Agency management role.

Also the Agency focal point for accountability with external entities, HQ articulates NASA’s goals, objectives, and strategies, through the Agency and Enterprise Strategic Plans, the Annual Performance Plan, and the Annual Budget. These plans are the HQ customer products. NPG 1000.3, *The NASA Organization*, lists NASA mission requirements and documents Agency and HQ management roles and responsibilities. All other products support either the development or implementation of these customer products or they contribute to the mission requirements for HQ.

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While the HQ QMS covers the entire spectrum of HQ products, the focus of the system is the customer products: the Agency and Enterprise Strategic Plans, the Annual Performance Plan, and the Annual Budget.

1.2 HQ Products

The HQ Office of the Chief Financial Officer and HQ Enterprise Offices are the process owner for HQ's customer products. However, every HQ organization supports the Office of the Chief Financial Officer in developing these products as well as translating the higher-level products into actionable plans and activities for NASA's field Centers. All HQ organizations are an integral part of the process. Table 1 shows HQ's customer products and their purpose. HQ products are discussed in more detail in Chapters 3 and 4. Appendix B provides a crosswalk between HQ QMS activities and HQ customer products and NPG 1000.3 mission requirements.

Table 1, NASA Headquarters Customer Products

Process	Product	Purposes
<ul style="list-style-type: none"> Strategic Planning: Continuous iterative process to develop, review, and revise Agency mission, goals, and objectives consistent with National objectives, and Administration and Congressional direction (see QMS Manual Chapter 3) 	<ul style="list-style-type: none"> NASA Strategic Plan 	<ul style="list-style-type: none"> Articulates Agency vision, mission, goals, and objectives and Agencywide strategies to achieve them Directs the work of all NASA organizations and employees Reviewed and updated every three years. Interim adjustments made as needed and in parallel with annual performance planning process
	<ul style="list-style-type: none"> Enterprise Strategic Plans 	<ul style="list-style-type: none"> Elaborates on Strategic Enterprise mission and goals in alignment with NASA's Strategic Plan, detailed objectives, and implementing strategies Describes principal programs and/or processes Reviewed and updated as part of any update to the NASA Strategic Plan
<ul style="list-style-type: none"> Performance Planning and Budgets: Annual process to ensure that detailed planning, resources, and performance expectations are aligned to support the achievement of the NASA and Strategic Enterprise Plans (see QMS Manual Chapter 4) 	<ul style="list-style-type: none"> NASA Annual Performance Plan 	<ul style="list-style-type: none"> Sets measurable goals that define what NASA plans to accomplish during a fiscal year Reflects goals at a level of accomplishment commensurate with resources requested and subsequently funded Submitted to Congress as an integral part of the President's Budget Is a source evaluation information and customer feedback useful for continual improvement
	<ul style="list-style-type: none"> Annual Budget Submit 	<ul style="list-style-type: none"> Provides program planning and related budget estimates Determines how resources to perform work of the Agency and HQ are allocated (Budget formulation) Establishes funding controls for financial management of Agency resources for programs, projects and operations. (Budget execution)

1.3 HQ Customers

NASA's ultimate customer is the American people. The American people's representatives, the President and Congress, respond to the consensus of public opinion with debate and eventually decisions that provide both direction to NASA and the funding needed to execute those decisions. HQ strategic, performance, and budget planning activities translate Administration and Congressional requirements into the Agency and Enterprise Strategic Plans, the Annual Performance Plan, and the Annual Budget. The Agency provides these plans and the NASA budget to the Administration and Congress in response to their direction.

NASA also seeks inputs from its stakeholders in the science and education communities; commercial, aerospace, and nonaerospace industries; and Federal agencies in developing Strategic Plans. As part of this process each NASA Enterprise seeks input from the particular stakeholders unique to that Enterprise. Mechanisms for obtaining input include external reviews, peer reviews, and circulating draft Enterprise plans for review and comment.

Just as the Office of the Chief Financial Officer is the process owner for HQ's customer products and submits them to the Administration, the Office of Legislative Affairs has primary responsibility for NASA's communication with Congress. All codes are responsible for supplying the Office of the Chief Financial Officer and the Office of Legislative Affairs with information on their programs and activities to support these communications.

Sources of customer interaction/feedback include, but are not limited to:

- a. The Office of the Chief Financial Officer's interactions with the Administration on the NASA Strategic Plan, the Annual Performance Plan, the Annual Budget, and Annual Performance Report.
- b. The Office of Legislative Affairs' interactions with Congress.
- c. The NASA Administrator's Correspondence tracked through the Correspondence Control Office.
- d. HQ Strategic Enterprise interactions with NASA stakeholders

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1.4 HQ Quality Management System Components

Figure 1 shows the relationships among the HQ QMS components.

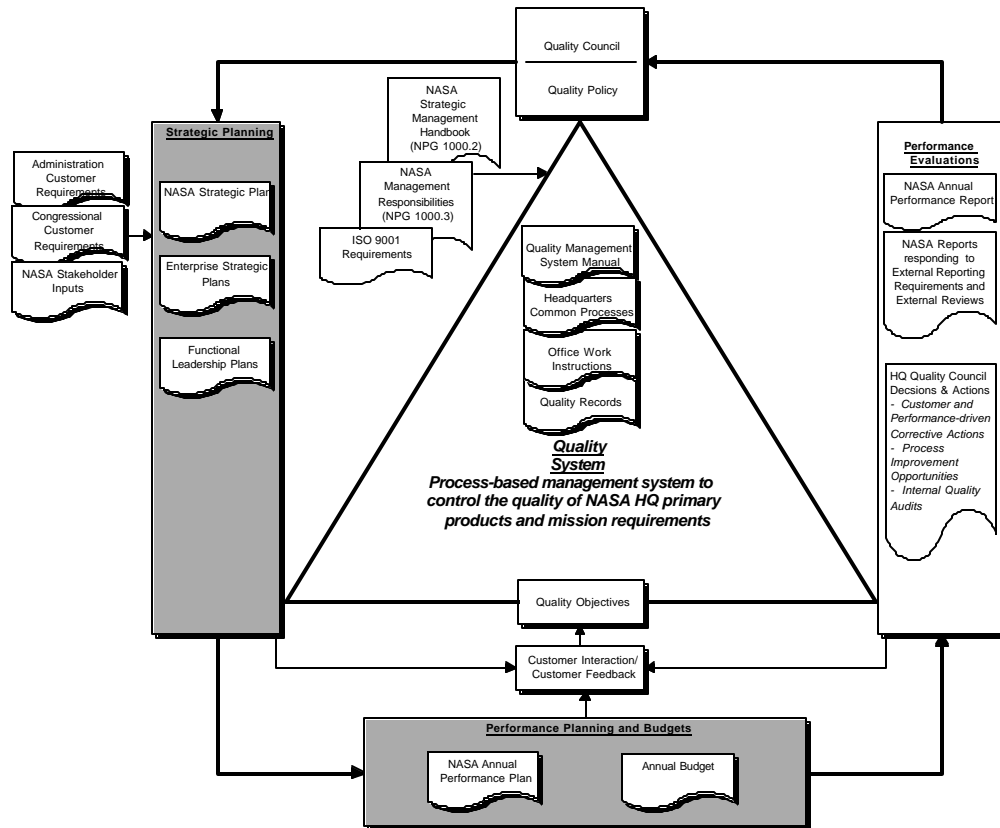


Figure 1.1, HQ QMS Components

1.4.1 HQ Quality Council and Quality Policy

The HQ Quality Council is led by the NASA Associate Deputy Administrator and consists of the HQ officials-in-charge. It establishes the quality policy and assesses QMS performance. The goal is to ensure that the QMS meets our quality policy requirements, quality objectives, and the ISO 9001 quality management system standard. The HQ quality policy is **“to consistently deliver the cutting-edge, quality products and services required by our customers.”**

The Quality Council reviews product and process measures and customer feedback against our quality objectives to determine continual improvement, corrective, and preventive actions for the QMS. HQ Policy Charter (HQPC) 1150.1 Headquarters Quality Council governs quality Council operations and provides details of review inputs and results.

1.4.2 Process-Based Management

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The HQ QMS is a process-based management system that is designed to reduce the variability in the quality of the HQ products by defining:

- a. Consistent, repeatable steps in the work processes for strategic planning, performance planning, and budgets, and
- b. Process controls to address customer, incoming planning, and applicable mission requirements for the HQ products.

Our process-based management system ensures that HQ applies consistent, uniform business practices to implement the NASA Strategic Management System.

1.4.3 Quality Objectives

Quality objectives are performance targets based on HQ customer requirements. NASA develops these objectives through interactions with and feedback from customers and articulates them in NASA strategic plans, performance plans, and budget documents. These quality objectives are key to HQ performance evaluation (see Chapter 5). QMS planning is controlled through the documentation of the processes described in sections 3.2, 4.2, and 4.3. The process development and its resulting documentation constitute QMS planning.

1.4.4 QMS Documentation

The HQ QMS features a hierarchical relationship of documents. The QMS documents are incorporated within the Headquarters Directives System (see HQPD 1400.1A). The Headquarters Directives System consists of Headquarters Policy Directives (HQPD), Headquarters Procedures and Guidelines (HQPG), Headquarters Policy Charters (HQPC), and Headquarters Office Work Instructions (HQOWI). Within the Headquarters QMS documentation structure the highest level document is the QMS Manual, HQPD 1200.1. It describes the QMS and the quality policy. At the next level are HQ Procedures and Guidelines which are HQ-wide processes to manage activities performed by more than one HQ organization. The next level of documentation is the Headquarters Office Work Instruction (HQOWI), which provides detailed procedures a particular HQ code requires to perform its responsibilities. The final level of documentation is the quality record, which demonstrates that the procedure is properly adhered to. All HQOWI's, procedural documents, and their resultant records must comply with HQPG 1400.1, *Document and Data Control*. QMS documents reference various other policies, procedures, and guidelines so as to not duplicate or contradict existing policies – most notably, NASA Policy Directives (NPDs) and NASA Procedures and Guidelines (NPGs). The current version of the QSM, HQPGs, and HQOWIs are available on the HQ electronic document management system at [HTTP://NODIS3.GSFC.NASA.GOV/LIBRARY/hq_list.cfm?orderby=code&sort=asc](http://NODIS3.GSFC.NASA.GOV/LIBRARY/hq_list.cfm?orderby=code&sort=asc) [SC](#)

1.4.4.1 HQOWIs

HQOWIs document processes that are unique to an individual organization. They:

- a. Define the processes that individual organization uses to deliver customer products, or
- b. Define the products and processes that individual organization uses to meet an organization's mission requirements as defined in NPG 1000.3.

OWIs provide HQ personnel with guidance required beyond their education and experience to ensure process consistency and repeatability. Process consistency and repeatability provides an organization the ability to reduce the product quality variability yielded by the process and ultimately leads to improved product quality.

1.4.4.2 Quality Records

Quality records provide objective evidence that quality requirements have been met. Quality records include reports, files, data sheets, letters, and completed forms. Quality records are kept in accordance with NPG 1441.1, *Records Retention Schedules*, the specifics for which are documented in each OWI.

The QMS documentation hierarchy is illustrated in Figure 1.2.

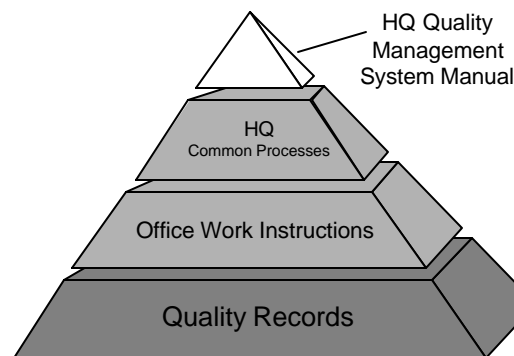


Figure 1.2 HQ QMS Document Hierarchy

1.4.5 Performance Evaluation

HQ conducts performance evaluation activities to determine the Agency's ability to meet goals outlined in its strategic and performance plans. These performance evaluations address both the delivery of HQ customer products and HQ's ability to support NPG 1000.3 mission requirements. Chapter 5 provides further detail on these performance evaluation activities.

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2 - NASA HEADQUARTERS ROLES AND RESPONSIBILITIES

2.1 Organizational Overview

The NASA Organization (NPG 1000.3) documents Agency and HQ management roles and responsibilities. The NASA Associate Deputy Administrator is the HQ official-in-charge for the QMS and ensures that these management responsibilities and authorities are communicated throughout HQ. While the Associate Deputy Administrator is ultimately responsible, the Executive Management Representative has day-to-day responsibility for the establishment, implementation, and maintenance of the QMS.

Officials-in-charge of individual HQ offices are also responsible for communicating NPG 1000.3 mission responsibilities and ensuring that all QMS policies, procedures, and instructions within their areas of responsibility are implemented. These officials comprise the HQ Quality Council. The Quality Council is responsible for evaluating the continuing suitability, adequacy, and effectiveness of the HQ QMS.

All HQ employees are responsible for understanding and complying with the HQ QMS and applicable policies, procedures, and instructions. Figure 2.1 depicts the organizational relationships at HQ. Although the NASA Centers are not included in the scope of the HQ QMS, they are included on the organization chart to identify their relationship to their respective Enterprise.

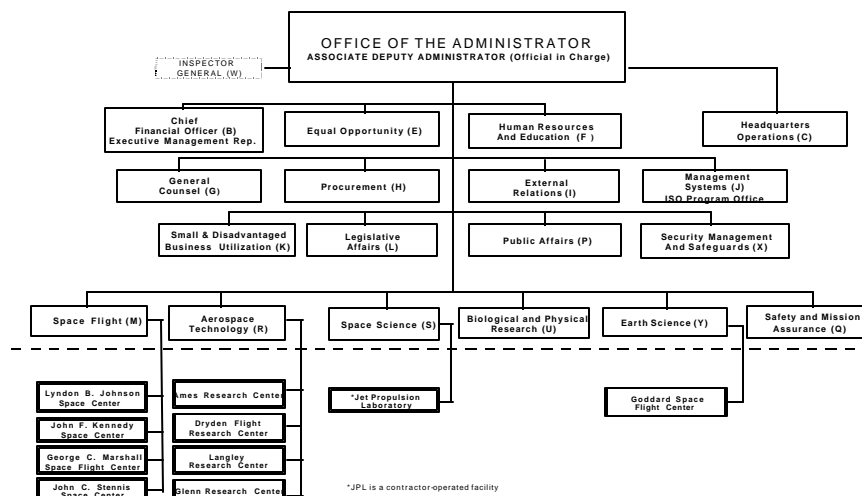


Figure 2.1 NASA Headquarters Organizational Chart

2.2 The Associate Deputy Administrator

The Associate Deputy Administrator, as the official-in-charge of the HQ QMS, provides the resources to implement, maintain, and improve the QMS. The Associate Deputy Administrator also chairs the HQ Quality Council.

2.3 The Executive Management Representative

The Executive Management Representative has day-to-day responsibility for the QMS. The Executive Management Representative is currently in the Office of the Chief Financial Officer. The Executive Management Representative ensures that the QMS is established, implemented, and maintained and reports on the QMS performance to the Quality Council in accordance with HQPC 1150.1 *Headquarters Quality Council*. Reports cover product and process measures; customer feedback; corrective and preventive actions; QMS improvement recommendations; and resource issues. The Executive Management Representative also provides recommendations regarding resources, including the types of personnel, training, equipment, and facilities needed to enhance customer satisfaction by meeting customer needs. The Executive Management Representative promotes awareness of customer requirements throughout Headquarters.

The Director of the ISO 9001 Program Office supports the Executive Management Representative and has the authority to:

- Take action to identify and prevent QMS problems;
- Recommend, or suggest solutions;
- Verify the implementation and effectiveness of these solutions;
- Record problems with the product, process, and QMS; and
- Develop communication strategies to ensure that customer requirements are understood and integrated into QMS processes.

The ISO 9001 Program Office leads internal quality audits to ensure that the QMS conforms to the ISO 9001 quality standard and establishes resource requirements for these audits. The ISO Program Office forwards audit findings to the management personnel responsible for the area being audited, who are then responsible for determining a corrective action implementation plan and date.

2.4 Officials-in-Charge

The HQ officials-in-charge are the heads of the Strategic Enterprises and Functional Offices. They comprise the HQ Quality Council. They provide customer focus and communicate the mission responsibilities in NPG 1000.3. Officials-in-charge are responsible for allocating resources to ensure effective QMS operation, maintenance, and improvement within their organization. They must ensure that the quality policy is communicated, understood, implemented, and maintained at all levels of HQ organizations.

2.4.1 Communications and Customer Focus

Officials-in-charge must establish appropriate communication processes within their organizations and communicate with their employees regarding the QMS and its effectiveness. This is to ensure that HQ employees understand the customer requirements and are aware of the relevance of their activities to the achievement of QMS objectives. Officials-in-charge must solicit input from their employees regarding QMS implementation within their Strategic Enterprise or Functional Offices. Officials-in-charge must also provide employees with feedback from customers for continual improvement and corrective action activities.

2.4.2 Office Work Instructions

Officials-in-charge ensure effective control and implementation of mission responsibilities as stated in NPG 1000.3, *The NASA Organization*, through OWIs and other controlled procedural documents. Organizations must review their OWIs periodically to ensure that they are accurate and that the processes they describe produce products that are of acceptable quality. Officials-in-charge develop additional OWIs for internal management activities, as needed. All OWI's, procedural documents, and their resultant records must comply with HQPG 1400.1, *Document and Data Control*. OWIs are available on the HQ electronic document management system at [HTTP://NODIS3.GSFC.NASA.GOV/LIBRARY/hq_list.cfm?orderby=code&sort=asc](http://NODIS3.GSFC.NASA.GOV/LIBRARY/hq_list.cfm?orderby=code&sort=asc)

2.4.3 Employee Training and Qualifications

Each official-in-charge must ensure that adequately qualified and trained personnel prepare HQ products. The official-in-charge ensures that the personnel performing work are competent on the basis of education, training, skills, and experience. The Office of Headquarters Operations has established and maintains HQPG 3410.4, *Quality System Training*. It requires officials-in-charge to ensure that supervisors in their organization identify training requirements for personnel performing work that directly affects quality. The official-in-charge must provide training or take action to satisfy these requirements. Internal audits evaluate training effectiveness.

HQPG 3410.4 governs personnel practices that are common across HQ. For example, HQPG 3410.4 requires officials-in-charge to identify applicable OWIs for an employee's position via the On-the-Job (OJT) training form. HQPG 3410.4 also discusses the Office of Personnel Management's rules that govern HQ hiring process and employee position descriptions. These position descriptions document the responsibilities of all personnel whose work affects product quality. Employee performance elements are assigned annually using an employee performance planning process. Employee performance is evaluated annually against the performance elements identified in the plan.

2.4.4 QMS Audits and Corrective Actions

HQ maintains a documented procedure to conduct internal quality system audits. Audits are independent assessments that ensure that the HQ QMS complies with the ISO 9001 quality management system standard. A third-party registrar conducts external audits. HQ civil servant and contractor personnel conduct internal audits (see HQPG 1280.3, *Internal Quality Audits*). The ISO 9001 Program Office schedules audits, according to the activity's criticality to QMS effectiveness. Officials-in-charge must ensure that their staffs support any audits conducted in their area. The ISO 9001 Program Office documents the results of these audits, maintains them as quality records, and distributes them to the officials-in-charge. The automated Nonconformance Report System, located at <http://hqiso9000.hq.nasa.gov/ncr.htm>, tracks nonconformances identified during the audit. This ensures that the OIC takes timely corrective action to eliminate the root cause(s) of the nonconformances.

Personnel independent of the activity being audited conduct internal audits of HQ activities. The purpose of the audit is to verify compliance with documented procedures, plans, instructions, and customer agreements, and to evaluate the effectiveness of the HQ QMS. Follow-up audits assess any corrective actions the official-in-charge has made in response to audit findings. The results of HQ quality audits are key inputs to Quality Council activities.

Corrective actions are actions taken to eliminate the cause(s) of QMS nonconformances. It is important to note that merely applying a solution to a problem is not corrective action. Corrective action requires identifying and eliminating the cause of the problem so that it does not recur. This is analogous to treating the disease and not just its symptoms.

A closed-loop, corrective action process is used to correct problems involving products, services, or processes. A closed-loop process is one in which:

- A problem is identified,
- The root cause of the problem is determined,
- A corrective action plan is identified to eliminate the cause,
- The corrective action is implemented, and
- The effectiveness of the corrective action is verified.

2.4.5 Purchasing

Officials-in-charge are responsible for ensuring that their organization's management processes adequately control purchased products and services that affect the quality of HQ products. OWIs help ensure this by documenting purchasing methods in specific HQ organizations.

There are several purchasing vehicles used at HQ:

- The HQ Office of Space Science awards a contract to the California Institute of Technology (Caltech) to manage NASA's Jet Propulsion Laboratory in

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Pasadena, California. The Office of Space Science regularly evaluates Caltech performance.

- Various HQ codes issue solicitations that identify areas of research interest. HQ produces three types of solicitations: NASA Research Announcements, Cooperative Agreements Notices and Announcements of Opportunity.
- The HQ Office of Aerospace Technology has purchasing responsibilities for NASA's Small Business Innovation Research/Small Business Technology Transfer Program.
- HQ codes procure all other products and services under a blanket Memorandum of Agreement with the Goddard Space Flight Center supported by two Service Level Agreements.

Appendix C describes in greater detail the different purchasing vehicles and their application to specific HQ codes.

2.4.6 Work Environment and Infrastructure

The Office of HQ Operations is responsible for ensuring that the work environment is adequate for the workforce to deliver quality products and support HQ mission requirements. In addition to infrastructure management, the Office of HQ Operations manages: HQ Research and Program Management budget formulation and execution, to include personnel, travel, and ceiling allocations for HQ Offices; Research Operations Support budget; policy guidance, management, and oversight of HQ onsite and offsite contractor support personnel, to include occupational health activities; and all HQ human resources and equal opportunity activities. There are OWIs and other procedural documents defining these processes. The Office of HQ Operations personnel at GSFC provide HQ training and development support. Officials-in-charge provide the Office of HQ Operations their requirements for support in these areas.

2.5 HQ Employees

All NASA HQ employees are responsible for understanding and complying with the HQ QMS and quality policy. Supervisors and employees must jointly complete an on-the-job training form (see HQPG 3410.4, *Quality System Training*) identifying the training employees need to perform their responsibilities. This includes knowing the goals and objectives of their organization and any pertinent agreements or technical guidelines. The on-the-job training form also identifies OWIs that pertain to their work. In accordance with NPG 1000.2, *NASA Strategic Management Handbook*, employees are responsible for familiarizing themselves with the Agency Strategic Plan and their respective Strategic Enterprise or Functional Leadership Plans.

3 - HEADQUARTERS STRATEGIC PLANNING

3.1 NASA Strategic Planning Overview

NASA strategic planning, as described in the *NASA Strategic Management Handbook* (NPG 1000.2) is a continuous, iterative process used to develop, review, and revise the Agency's vision, mission, goals, and objectives and Agencywide strategies for achieving them. These are documented in the NASA Strategic Plan. Enterprise Strategic Plans provide more information on Enterprise missions, including detailed objectives and implementing strategies.

The NASA Strategic Plan is updated and revised every three years to ensure that Agencywide vision, mission, goals, and objectives reflect current priorities. Enterprise Strategic Plans must be consistent with NASA's Strategic Plan and other Enterprise Strategic Plans. HQ Functional Offices develop Functional Leadership Plans with goals, objectives and performance measures for Agencywide functional activities. The purpose of the Functional Leadership Plans is to help implement the Agency's Strategic Plan, improve Agency management, and respond to new external direction.

The NASA Strategic Plan directs the work of all NASA organizations and employees. The Plan's objectives are the performance measures used during performance evaluation for continual improvement and corrective action measures (see Chapter 5).

NASA HQ is responsible for developing the NASA and Enterprise Strategic Plans. The Office of the Chief Financial Officer coordinates the development of the NASA Strategic Plan in collaboration with HQ Strategic Enterprises, Crosscutting Process stewards, and Functional Offices. The Strategic Enterprises are responsible for developing their Enterprise Strategic Plans. The HQ Strategic Enterprise offices are:

- Office of Space Flight (Code M),
- Office of Aerospace Technology (Code R),
- Office of Space Science (Code S),
- Office of Biological and Physical Research (Code U), and
- Office of Earth Science (Code Y).

3.2 HQ Strategic Planning Process

As the process owner for HQ strategic planning, the Office of the Chief Financial Officer has detailed the process for developing the NASA Strategic Plan in a strategic planning OWI. The HQ Strategic Enterprise offices have strategic planning OWIs that document the processes they use in coordination with the Agency planning process to develop their Enterprise Strategic Plans and provide input to the NASA Strategic Plan.

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The Government Performance and Results Act (GPRA) of 1993 requires Federal agencies to develop and submit Agency strategic plans every three years to the Office of Management and Budget (OMB) and Congress. The OMB is the Administration's agent for establishing the requirements for the strategic plan, in accordance with the requirements of GPRA. The Office of the Chief Financial Officer's strategic planning OWI identifies customer requirements received from the Administration (via OMB) and from Congress as key inputs into the HQ strategic planning process. OMB also provides feedback, including recommended corrective action or continual improvement activities that NASA incorporates into the process as warranted. Not all customer feedback requires corrective action or continual improvement activities. Management makes these decisions based on many factors.

Office of the Chief Financial Officer and Enterprise OWI's identify the activities, interactions, personnel, and approval authority required for strategic plan development. The Office of the Chief Financial Officer establishes product and process measures for the strategic planning process to ensure that it performs as intended. The Quality Council reviews customer feedback and product and process measures and recommends corrective action and continual improvement.

All HQ strategic planning OWIs are available on the HQ electronic document management system.

4 - HEADQUARTERS PERFORMANCE AND BUDGET PLANNING

4.1 NASA Performance and Budget Planning Process Overview

NASA's performance and budget planning process, described in the *NASA Strategic Management Handbook* (NPG 1000.2), ensures that plans, resources, and performance expectations are aligned to support achievement of the NASA mission. The NASA performance and budget planning cycle draws on strategic plans from the previous planning cycle, capital investment plans, the five-year budget, and the results of the ongoing performance evaluation process (see Chapter 5). Program planning further specifies technical, schedule, cost, and performance criteria.

NASA HQ is responsible for leading the Agency performance and budget planning process. The HQ performance and budget planning process yields two products, the annual Performance Plan and the annual Agency Budget. The Performance Plan and budget are submitted to OMB for approval and are then submitted to the Congress. The Administration transmits guidance (via OMB) to NASA through the Office of the Chief Financial Officer, which is the process owner for development of both these products.

4.2 HQ Budget Planning Process

The Office of the Chief Financial Officer has developed an OWI that describes NASA's budget process. The OWI describes the process to formulate, review, and disposition budget requirements for all programmatic and institutional activities. The process integrates inputs from HQ Strategic Enterprises and Functional Offices. NASA Centers provide input as part of HQ Strategic Enterprise planning inputs (see QSM Sec 2.1, Figure 2, for relationship between Strategic Enterprises and NASA Centers).

Individual HQ code OWIs detail the processes they use to develop their budget submissions for their programs and institutions. These OWIs show inputs received from NASA centers and any interrelationships with other HQ codes. Enterprise offices and those Functional Offices with Agency-wide financial responsibilities provide budget inputs directly to the Office of the Chief Financial Officer. HQ offices also submit budget requests for HQ institutional costs to the Office of Headquarters Operations, which submits a request for HQ operations costs to the Office of the Chief Financial Officer. HQ Operations has an OWI detailing how they integrate all HQ institutional budget requirements prior to submitting them to the Office of the Chief Financial Officer.

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The sequences of activities and interactions required for developing the budget inputs to the Office of the Chief Financial Officer for each HQ office are identified in the appropriate HQ office OWIs. Applicable personnel and approval authority are also identified in the OWIs. The Office of the Chief Financial Officer also establishes performance measures to ensure the process performs as intended. The final Budget transmitted to OMB is compatible with the NASA Strategic Plan and describes how NASA plans to achieve the goals and objectives stated in the Strategic Plan and the Performance Plan.

4.3 HQ Performance Planning Process

Consistent with GPRA, the annual Performance Plan contains performance goals and indicators to measure NASA's performance. An OWI by the Office of the Chief Financial Officer describes all the sequences of activities, interactions, and appropriate accountabilities required to develop the Performance Plan. The Office of the Chief Financial Officer has established product and process measures to ensure that this process performs as intended. Annual performance goals and indicators measure NASA's progress toward achieving its strategic objectives. The Annual Performance Plan shows which performance goals for the budget year support which Agency strategic goals and objectives. In order to ensure that the performance goals are useful to Enterprise and Functional Office decision-making, as well as Agency decision-making, it is important that the ownership for these goals reside with the appropriate Enterprise or Functional Office.

OMB establishes Administration's requirements for the Performance Plan. The Office of the Chief Financial Officer's performance planning OWI identifies customer requirements as an input into the HQ performance planning process. The Administration, via OMB, provides feedback to the Office of the Chief Financial Officer, who identifies corrective action or continual improvement activities and incorporates them into the process. It is important to note that not all customer feedback requires corrective action or continual improvement activities. Management decides based on many factors. The Quality Council reviews customer feedback and makes corrective action and continual improvement decisions.

All HQ performance and budget planning OWIs are available on the HQ electronic document management system.

5 - HEADQUARTERS PERFORMANCE EVALUATION

HQ conducts performance evaluations to evaluate NASA's performance against the goals outlined in its strategic and performance plans. This performance evaluation process is identified in the *NASA Strategic Management Handbook* (NPG 1000.2). HQ uses various performance evaluation methodologies. First among these is the Agency's annual performance planning and reporting process. The Agency also has a system of management councils (such as the HQ Quality Council and the Program Management Council) with on-going responsibilities to conduct internal evaluations. There are also regular reviews for such issues as functional management, science, engineering, technology plans and performance activities (see NPG 1000.3). The Agency also relies on external review processes and a broad and diverse system of advisory committees to provide external input into Agency management, programs, strategic plans, and performance. Finally, NASA receives evaluations from completely independent external organizations such as the National Academy of Sciences and the General Accounting Office.

The use of internal and external quality audits is also employed to assess the HQ processes that develop and prepare the HQ products. HQ employees can electronically identify issues, problems, and/or opportunities for QMS improvements through the Process Improvement Opportunity (PIO) system. The PIO system is at <http://hqiso9000.hq.nasa.gov>. All QMS issues must be addressed using the PIO system. The ISO 9001 Program Office reviews these issues and in collaboration with the affected official-in-charge determines if an improvement to a product, service, process, or the QMS can be realized. Audit results and PIO inputs are submitted to the Quality Council and are used to determine the health and suitability of the HQ QMS.

The HQ performance evaluation activities are summarized in Table 2.

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Table 2, Selected NASA Headquarters Performance Evaluation Activities

Process	Activity	Purposes
<ul style="list-style-type: none"> Performance Evaluations: Process to evaluate the Agency's ability to meet goals outlined in its strategic and performance plans 	<ul style="list-style-type: none"> NASA Annual Performance Report 	<ul style="list-style-type: none"> Shows link between appropriations requested and specified performance goals Reports performance of the past fiscal year against goals established in the Annual Performance Plan for that fiscal year
	<ul style="list-style-type: none"> NASA Reports and Other Documents Developed in Response to External Reporting Requirements and External Reviews 	<ul style="list-style-type: none"> Developed in response to external regulatory reporting requirements or external reviews conducted by other Federal Agencies to assure that NASA activities comply with Federal laws and regulations for those Federal Agencies which have primary jurisdiction Developed in response to external reviews conducted by NASA stakeholders and peer reviewers to evaluate NASA mission performance and obtain external inputs on Agency strategies and planning/evaluation activities
	<ul style="list-style-type: none"> HQ Quality Council 	<ul style="list-style-type: none"> Forum for HQ management to identify customer/performance-driven issues that: (1) affect quality of HQ customer products and (2) continually improve the quality of HQ customer products and the processes that produce them Forum for HQ Management to assign and monitor the implementation of corrective actions to address those issues Forum for HQ management to address continuing suitability of QMS
	<ul style="list-style-type: none"> HQ Employee Process Improvement Opportunities 	<ul style="list-style-type: none"> Process available to HQ employees to identify opportunities to improve processes by which HQ products are developed and delivered (formerly the Quality System Deficiency Notice [QSDN])
	<ul style="list-style-type: none"> Internal Quality Audits 	<ul style="list-style-type: none"> Verify whether quality activities and related results comply with Quality policy and objectives Used as tool to determine the QMS effectiveness

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APPENDIX A - CONFORMANCE TO ISO 9001 STANDARD FOR QUALITY MANAGEMENT SYSTEMS

HQ's QMS complies with the ISO 9001-2000 QMS requirements. The HQ ISO 9001 Program Office (Code JI) is responsible for maintaining this compliance.

ISO 9001-2000 clauses listed in Table A-1 are not applicable to NASA HQ operations:

Table A-1, NASA HQ ISO 9001-2000 Exclusions

ISO 9000-2000 Clause #	Clause Title	Rationale for Seeking Exclusion
7.3 (7.3.1-7.3.7)	Design and/or development	The products of NASA HQ are planning and budgeting in nature and are predefined. Planning and budgeting are not subject to the design process.
7.5.1c)	Operations control	No equipment that could adversely affect product or service quality is used in the product realization or service process.
7.5.1d)	Operations control	No monitoring or measuring devices are used in product or service realization
7.5.1e)	Operations control	No monitoring or measuring devices are used in product or service realization
7.5.1f)	Operations control	HQ products require no release, delivery, or post delivery activities associated with the plans or budgets.
7.5.2	Validation of processes for production and service provision	This clause is not applicable to HQ products as they can be verified, monitored, and measured subsequent to realization.
7.5.3	Identification and traceability	HQ products are discrete unique products, and it would not be appropriate or value added to apply identification and traceability. Process controls are in place to ensure that these products remain discrete and unique.
7.5.4	Customer property	No customer property is maintained at Headquarters
7.5.5	Preservation of product	The products of Headquarters are not subject to deterioration or loss of conformity
7.6	Control of monitoring and measuring equipment	No monitoring or measuring devices are used in product service realization

A crosswalk that maps the HQ QMS to the ISO 9001-2000 standard is provided below.

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Table A-2, ISO 9001-2000/HQ QSM Manual Crosswalk

ISO 9001-2000 Clause	QMS Manual Sections																								
	P-1, Purpose	1.1, HQ QMS Overview	1.2, HQ Customer Products	1.3, HQ Customer Products	1.4.1, HQ Quality Council & Policy	1.4.3, Quality Objectives	1.4.4, QMS Documentation	1.4.5, Quality Records	2.1, Performance Evaluation	2.2, Organizational Overview	2.3, Associate Deputy Administrator	2.4, Officials-in-Charge	2.4.1, Comm. & Customer Rep	2.4.3, Training & Qualification	2.4.5, Purchasing	2.4.6, Work Environment	3.1, NASA Strategic Planning	3.2, HQ Strategic Planning	4.1, NASA Performance & Bgt Planning	4.3, HQ Perf. Planning Process	5, Performance Evaluation	App B-C-OWIP/Products Map	Document & Data Control HCP	Training HCP	Internal Audit HCP
4. Quality Management System																									
4.1. General requirements																									
4.2. Documentation requirements																									
4.2.1. General																									
4.2.2. Quality manual																									
4.2.3. Control of documents																									
4.2.4. Control of quality records																									
5. Management Responsibility																									
5.1. Management responsibility																									
5.2. Customer focus																									
5.3. Quality policy																									
5.4. Planning																									
5.4.1. Quality objectives																									
5.4.2. Quality management system planning																									
5.5.1. Responsibility and authority																									
5.5.2. Management representative																									
5.5.3. Internal communication																									
5.6.1. General																									
5.6.2. Review input																									
5.6.3. Review output																									
6. Resource Management																									
6.1. Provision of resources																									
6.2.1. General																									
6.2.2. Completeness, awareness, and training																									
6.3. Infrastructure																									
6.4. Work environment																									
7. Product Realization																									
7.1. Planning of product realization																									
7.2.1. Determination of requirements related to the product																									
7.2.2. Review of requirements related to the product																									
7.2.3. Customer communication																									
7.4.1. Purchasing process																									
7.4.2. Purchasing information																									
7.4.3. Verification of purchased product																									
7.5.1 a-c, Control of production and service provision																									
8. Measurement, Analysis, and Improvement																									
8.1. General																									
8.2.1. Customer satisfaction																									
8.2.2. Internal audit																									
8.2.3. Monitoring and measurement of processes																									
8.2.4. Monitoring and measurement of product																									
8.3. Control of nonconforming product																									
8.4. Analysis of data																									
8.5.1. Continual improvement																									
8.5.2. Corrective action																									
8.5.3. Preventive action																									

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APPENDIX B – OFFICE WORK INSTRUCTIONS CROSSWALK TO HQ CUSTOMER PRODUCTS

For the most recent version of the Office Work Instructions crosswalk to HQ customer products and mission requirements, consult
[HTTP://NODIS3.GSFC.NASA.GOV/LIBRARY/hq_list.cfm?orderby=code&sort=asc](http://NODIS3.GSFC.NASA.GOV/LIBRARY/hq_list.cfm?orderby=code&sort=asc) ,

APPENDIX C - PURCHASING REQUIREMENTS

C.1 Jet Propulsion Laboratory Purchasing Requirements

The HQ Office of Space Science purchases services to operate NASA's Jet Propulsion Laboratory (JPL) in Pasadena, California via a multiyear contract with the California Institute of Technology (Caltech). JPL is a Federally Funded Research and Development Center. The processes Code S uses to award the JPL contract and evaluate Caltech performance are identified respectively in HQOWI5135-S009, *Competing and Awarding Prime Contract for JPL Operations*, and HQOWI5112-S010, *Evaluating, Approving, and Authorizing Award Fee for JPL Operations*.

C.2 Research Purchasing Requirements

Officials-in-charge may also issue solicitations that identify areas of research interest. These announcements solicit research, education grant proposals, and investigative ideas that contribute to broad scientific and technical objectives. The HQ Codes' pre-award activities are generally comprised of solicitation, evaluation, and selection of proposals. HQ produces three types of solicitations:

- NASA Research Announcements (NRAs)
- Cooperative Agreements Notices (CANs)
- Announcements of Opportunity (AOs).

The process of soliciting, evaluating and selecting proposals under these solicitation instruments varies somewhat and is governed by regulation. Post-selection activities (e.g., award, payment, administration, verification, etc.) are performed by the awarding NASA Field Center. Procurement of all other scientific research is provided by NASA's Centers in accordance with their documented procedures.

C.3 SBIR/STTR Purchasing Requirements

Although the overall management and execution of NASA's Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Program is the responsibility of the NASA centers, the HQ Office of Aerospace Technology has certain SBIR/STTR responsibilities. They approve the SBIR/STTR acquisition plan, consider the evaluations of SBIR/STTR proposals, and select subcontractors as the Source Selection Official for the SBIR/STTR Program.

C.4 Other Purchasing Requirements

HQ organizations rely on Goddard Space Flight Center (GSFC) to procure products and services but maintain process control through agreements with GSFC. These agreements are documented in Memorandums of Agreement (MOA) and Service Level Agreements (SLA). The MOA details HQ functions transferred to GSFC. The two SLAs, one for procurement and one for grants, detail performance parameters to which both HQ and GSFC have agreed. The Office of HQ Operations administers and keeps records on the MOA and SLAs.